| ΔME                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | NDMENT OF SOLICITATION/N                                                                                                                                                                                                     | IODIFICATION OF CO                                                                                                                                         | NTRACT                                                                | CONTRACT ID CODE                                                                                                               |                         | PAGE OF PAGES 1 1 4                                                                       |  |  |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                              | 3. EFFECTIVE DATE See Block 16C                                                                                                                            |                                                                       | I<br>ION/PURCHASE REQ. NO.                                                                                                     | 5.                      | PROJECT NO. (If applicable)                                                               |  |  |
| 6. ISSUED BY CODE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                              |                                                                                                                                                            | 7. ADMINIST                                                           | ADMINISTERED BY (If other than Item 6) CODE                                                                                    |                         |                                                                                           |  |  |
| P                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ohn F. Kennedy Space Center, No<br>rocurement Office – ODIN – OP-<br>ennedy Space Center, FL 3289                                                                                                                            | -MS                                                                                                                                                        | -                                                                     | , ,                                                                                                                            |                         |                                                                                           |  |  |
| 8. NAN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ME AND ADDRESS OF CONTRACTOR (No.,                                                                                                                                                                                           | street, county, State, and Zip Co                                                                                                                          | ode) (x)                                                              | 9A. AMENDMENT OF SOLICITATION NO.                                                                                              |                         |                                                                                           |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                              |                                                                                                                                                            | 9B. DATED (SEE ITEM 11)                                               |                                                                                                                                |                         |                                                                                           |  |  |
| 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | AO Corporation                                                                                                                                                                                                               |                                                                                                                                                            |                                                                       |                                                                                                                                |                         |                                                                                           |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 500 Greenway Center Drive                                                                                                                                                                                                    |                                                                                                                                                            |                                                                       | 10A. MODIFICATION OF CONTRACT/ORDER NO.                                                                                        |                         |                                                                                           |  |  |
| G                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | reenbelt MD 20770                                                                                                                                                                                                            |                                                                                                                                                            | NAS5-98144/CC90303B                                                   |                                                                                                                                |                         |                                                                                           |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                              |                                                                                                                                                            |                                                                       | 10B. DATED (SEE ITEM 13)                                                                                                       |                         |                                                                                           |  |  |
| CODE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                              | ITY CODE                                                                                                                                                   |                                                                       | December 1, 200                                                                                                                | )1                      |                                                                                           |  |  |
| 11TH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | IS ITEM ONLY APPLIES TO AMENDMENTS                                                                                                                                                                                           | OF SOLICITATIONS                                                                                                                                           |                                                                       |                                                                                                                                |                         |                                                                                           |  |  |
| (a) By on By separate Plant (a) By separate | must acknowledge receipt of this amendment completing Items 8 and 15, and returning                                                                                                                                          | copies of the amendment; (b) Bence to the solicitation and amen OFFERS PRIOR TO THE HOUF re already submitted, such chang is received prior to the opening | By acknowledging<br>dment numbers.<br>R AND DATE SP<br>ge may be made | receipt of this amendment on ea<br>FAILURE OF YOUR ACKNOWI<br>ECIFIED MAY RESULT IN REJE<br>by telegram or letter, provided ea | ach co<br>LEDG<br>ECTIC | opy of the offer submitted; or (c)<br>GEMENT TO BE RECEIVED AT<br>DN OF YOUR OFFER. If by |  |  |
| 13. TH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | IS ITEM APPLIES ONLY TO MODIFICATION                                                                                                                                                                                         |                                                                                                                                                            |                                                                       |                                                                                                                                |                         |                                                                                           |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | A. THIS CHANGE ORDER IS ISSUED PUI<br>NO. IN ITEM 10A.                                                                                                                                                                       | RSUANT TO: (Specify authority)                                                                                                                             | THE CHANGE                                                            | S SET FORTH IN ITEM 14 ARE                                                                                                     | MADI                    | E IN THE CONTRACT ORDER                                                                   |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | B. THE ABOVE NUMBERED CONTRACT/<br>appropriation date, etc.) SET FORTH IN ITE                                                                                                                                                | EM 14, PURSUANT TO THE AU                                                                                                                                  | THORITY OF FA                                                         | R 43.103(b).                                                                                                                   | s cha                   | anges in paying office,                                                                   |  |  |
| Х                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | X C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: NAS5-98144 Contract Clause C.7 Technology Refreshment Process and FAR Clause 52.212-4 Contract Terms and Conditions-Commercial Items, (c) Changes |                                                                                                                                                            |                                                                       |                                                                                                                                |                         |                                                                                           |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | D. OTHER (Specify type of modification an                                                                                                                                                                                    | d authority)                                                                                                                                               | _                                                                     |                                                                                                                                |                         |                                                                                           |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | PORTANT: Contractor [ ] is not, [ X                                                                                                                                                                                          |                                                                                                                                                            |                                                                       |                                                                                                                                |                         |                                                                                           |  |  |
| _                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | nnis Space Center                                                                                                                                                                                                            |                                                                                                                                                            | -                                                                     | g solicitation/contract subject ma                                                                                             | itter v                 | vhere feasible.)                                                                          |  |  |
| Tech                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | nology Infrastructure: SWR EAE                                                                                                                                                                                               | B 2NET 00                                                                                                                                                  |                                                                       |                                                                                                                                |                         |                                                                                           |  |  |
| Char                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ge in Delivery Order Price: \$10                                                                                                                                                                                             | ,782.65 (INCREASE)                                                                                                                                         |                                                                       |                                                                                                                                |                         |                                                                                           |  |  |
| Except                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | as provided herein, all terms and conditions of                                                                                                                                                                              | of the document referenced in Iter                                                                                                                         | m 9A or 10A, as                                                       | heretofore changed, remains und                                                                                                | chang                   | ged and in full force and effect.                                                         |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | AME AND TITLE OF SIGNER (Type or print)                                                                                                                                                                                      |                                                                                                                                                            | 16A. NAME AN<br>Peneloj                                               | ND TITLE OF CONTRACTING O<br>DE A. Ebright<br>Cting Officer                                                                    | FFIC                    | ER (Type or print)                                                                        |  |  |
| 15B. C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ONTRACTOR/OFFEROR                                                                                                                                                                                                            | 15C. DATE SIGNED                                                                                                                                           |                                                                       | STATES OF AMERICA                                                                                                              |                         | 16C. DATE SIGNED                                                                          |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | (0)                                                                                                                                                                                                                          |                                                                                                                                                            | BY                                                                    |                                                                                                                                |                         | _                                                                                         |  |  |
| NON 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | (Signature of person authorized to sign)                                                                                                                                                                                     | 20                                                                                                                                                         | (Sig                                                                  | gnature of Contracting Officer)                                                                                                | <del></del>             | EODM 20 (Poy. 10.92)                                                                      |  |  |

1. In accordance with Master Contract NAS5-98144, C.7, Technology Refreshment Process, the technology refreshment services referenced below is hereby incorporated into this Delivery Order at a fixed price of \$10,782.65.

| SWR # Subject |                                              | Amount      |  |
|---------------|----------------------------------------------|-------------|--|
| EAEB 2NET 00  | Cable Plant Expansion in B1210 for NASA/CRSP | \$10,782.65 |  |

## 2. SWR EAEB 2NET 00

The contractor shall provide the labor (including, but not limited to, engineering, configuration management, user coordination/scheduling, wiring/cabling and equipment installation) and materials necessary to install (10) dual Cat5 cable from the network hub in room 120 to room 146 and terminate in the Panduit box under the floor and install (16) duplex multimode fiber jumpers from the network hub in room 120 to room 146 and terminate in Panduit outlet box under the floor in B1201 for NASA/CRSP as identified in OAO proposal dated June 28, 2002.

- a. The contractor shall perform the following tasks:
  - 1) Install (10) dual Cat5 wires from network hub in room 120 to room 146 and terminate in Cat5 jacks and place in (5) Panduit boxes under the floor.
  - 2) Install (16) duplex multimode fiber cables from network hub in room 120 to room 146 and terminate in (16) duplex fiber inserts and place in (8) Panduit boxes under the floor.
  - 3) Install (1) LGX fiber panel in existing equipment cabinet in room 120.
  - 4) Install (1) pack of 1000ST fiber panels and 32 multimode ST couplers in LGX fiber panel that was installed in item (3) above.
  - 5) Terminate all fiber into ST connectors and place in fiber inserts under the floor in room 146 and in the 1000ST fiber panels in the LGX panel in room 120.
  - 6) Terminate (20) Cat5 4-pair wires on 110 wiring blocks in room 120 next to existing network cabinet.
  - 7) Install (13) single gang faceplates e/w (1) blank module on the Panduit boxes that were installed in item (1) & item (2) above.
  - 8) Test and label fiber cables at both ends.
  - 9) Test and label Cat5 wires at both ends.
- b. The contractor shall provide the following material:
  - 1) 4,500 FT of 4-pair Cat5 Plenum wire (CMP-00424BEL-5U-06)
  - 2) 3,600 FT of duplex multimode fiber cable (370-949-FDDI-02)
  - 3) 64 each P2020C-C-125 multimode ST connectors (118974)
  - 4) 64 each cool cure consumables (142172)
  - 5) 32 each C2000A couplers (088987)
  - 6) 20 each 110C-4 connectors for 110 wiring blocks (073039)
  - 7) 16 each IMO II PCB fiber insert (162979)
  - 8) 13 each IMO II PCB blank module (148027)
  - 9) 13 each IMO II PCB singlegang faceplates (148025)

- 10) 13 each Panduit outlet boxes (205872)
- 11) 10 each IMO II PCB dual T568A Cat5 jacks (148034)
- 12) 1 pack 1000ST panels for LGX (106730)
- 13) 1 each LST1U-072/7 termination shelf (106722)
- c. Schedule: The completion of this effort shall be (4) four weeks after the receipt of a signed Modification.
- 3. Part II "Contract Administration Data", Item 4, is revised as indicated below to incorporate the increase of \$10,782.65 for these infrastructure upgrades:

## 4. <u>TOTAL DELIVERY ORDER VALUE</u> (through Mod No. 44)

| Ordered Seats/Service Levels (Attachment A)     | \$2,500,948.15  |
|-------------------------------------------------|-----------------|
| Catalog Actuals                                 | \$87,819.69     |
| Specialized Services                            | \$2,250.00      |
| Infrastructure Upgrades                         | \$1,068,075.51  |
| Sub-total                                       | \$3,659,093.35  |
| Less credits                                    | (\$353.95)      |
| Less retainage not earned                       | (\$19,691.57)   |
| Sub-total                                       | \$3,639,047.83  |
| Seats/Service levels projected through 11/30/04 | \$12,883,620.84 |
| Total Estimated Delivery Order Value:           | \$16,522,668.67 |

4. Part V "Technology Infusion (Infrastructure Upgrades)", Item 2 is modified to include the subject infrastructure upgrades. The signed date and completion date will be completed in a future infrastructure upgrade modification.

| Mod.<br>No. | Description of Work                                       | Date<br>Signed | Completion Date | Modification<br>Value |
|-------------|-----------------------------------------------------------|----------------|-----------------|-----------------------|
| 44          | EAEB 2NET 00 Cable Plant Expansion in B1210 for NASA/CRSP |                |                 | \$10,782.65           |

- 5. Payment Schedule: Invoicing and Payment for this modification will be made in accordance with Master Contract NAS5-98144, FAR 52.212-4: Commercial Items (May 1997) (Modified).
- 6. Reporting requirements: The contractor shall provide monthly status reports to the SSC Alternate DOCOTR, with a copy to the DOCO. These reports shall include, as a minimum, installation progress, and potential problem areas.

- 7. In consideration of the modification agreed to herein as complete equitable adjustment for the changes set forth, the Contractor hereby releases the Government from any and all liability under this delivery order for further equitable adjustments attributable to such facts or circumstances giving rise to these changes.
- 8. All other terms and conditions of this Delivery Order remain unchanged and in full force and effect.